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ABSTRACT

Augmented communication was used to reduce aberrant behaviors in a 19-year-old student with severe mental retardation and behavior disorder. Using an individualized constructed communication board with symbols and pictures, the behaviors of inappropriate greetings, grabbing objects without requesting, and lengthy latency in taking medication were addressed. All inappropriate targeted behaviors showed a marked decrease. Concomitant behaviors included increased language, reduction of tantrums, and positive affect. (Contains 19 references.) (Author/JDD)

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# Augmented Communication to Reduce Abberant Behaviors

a paper presented at The Rocky Mountain Educational Research Association

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submitted by

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## Abstract

Augmented communication was used to conduct a multiple baseline single subject design to reduce aberrant behaviors in a nineteen year old student with severe retardation and behavior disorder. Using an individualized constructed communication board with symbols and pictures, the behaviors of inappropriate greetings, grabbing objects without requesting, and lengthy latency in taking medication were addressed. All inappropriate targeted behaviors showed a marked decrease. Concomitant behaviors including increased language, reduction of tantrums, and positive affect were also noted and graphed when possible. Treatment was administered by the instructional assistant as the primary classroom caregiver. Observers were high school students trained by the special education teacher.

# Changing Aberrant Behaviors in the Student Who is Severely Cognitively Challenged Using Augmentative Communication

Even though there is a risk in attempting to interpret the actions of others (Donnellan, Mirenda, Mesaros, & Fassbender, 1984), the pointing, grabbing and tantrum behavior of a student with severe retardation and behavior disorder was perceived as social communication by her special education teacher. Choices, resulting in control of her environment, were perceived as necessary to her development of independence and integration (Shevin & Klein, 1984).

The subject is a nineteen year old Anglo female in a regular high school placement who, until October of last year, was in a residential setting. She has a history of temper upsets, aggression and noncompliance, including dropping to the floor when she is resisting, and a reluctance to giving up objects or

quickly grabbing objects away from others. She is on medication for tonic-clonic epilepsy resulting in grand mal seizures. She responds to yes and no questions. On the Stanford Binet, fourth edition, she is on a three year old level with a performance below thirty-six months and a quantitative score of twenty-four months. On speech and language evaluation she is at the two and one half year level. Her placement is a result of a diagnosis of severe retardation with behavior disorders. Her vocabulary consists of approximately 10 single word utterances, some of which she repeats meaninglessly, and a few two word phrases that she uses correctly in context.

Behaviors to be targeted were leaping out of her seat and grabbing people while yelling "Hand," grabbing objects from others without requesting and refusal to take her medication within a one minute latency period.

If the subject's behavior is a manifestation of an

inadequate communication system, the focus should be on programming communication development (Baumgart, Johnson, & Helmstetter, 1990). Long term successful functioning of individuals with severe handicaps depends on expanding their communication rather than just eliminating their inappropriate behaviors. As appropriate behavior is reinforced and strengthened it becomes more efficient than the aberrant responses in eliciting the desired reinforcers. If all behavior is communication than it is legitimate to perceive it as having message value in the context in which it occurs (Donnellan et al., 1984).

## Method

The most commonly used system with this population is manual signs even though more concrete visual-spatial systems, particularly those that involve pictures may have some clear

advantages for certain students. This would include this subject who has good visual discrimination skills. The advantage of such systems is that they can be individualized, constructed at a very low cost, family and caregivers can be Coactively involved and the lexicon can be continuously updated by adding new pictures (Mirenda, 1985).

When the mother was approached for permission to construct a communication board for her daughter she was resistent due to fear of diminished language as a result of augmentation. After a meeting that included the speech and language pathologist, the special education teacher, the mother and the researcher the mother agreed to the project with the understanding that if her child's language should start to deteriorate the project would be stopped at once. It was explained to the mother that research had shown that language

usage showed improvement in comprehension and production with augmentative communication intervention (Abrahamsen, Romski & Sevcik, 1989). For some individuals the provision of vocabulary items may increase linguistic skills in addition to facilitating communication (Mirenda, Iacono, & Williams, 1990). Application can serve as a bridge to development of spoken language (Kraat, 1986).

Materials used in developing augmentative communication must be age-appropriate, functional, and motivating for the individual (Siegel-Causey & Downing, 1987). The mother stated that the child liked photographs and pink. The special education teacher requested a means of greeting that would promote socially acceptable communication modes (Warrick, 1988). It was decided to go with a portable board since she liked to carry things. The board then became primarily a device to attract attention in a more acceptable manner. Picture Communication

Symbols (Mayer-Johnson 1985) representing "I" and "want" were to be permanently placed on the board. Although there is some concern that there is overuse of carrier phrases such as "I want" in augmentative strategies these two symbols appeared to be a more acceptable communication approach than her customary repetition of one word phrases to accomplish her wants (Musselwhite & St. Louis, 1988). Strand wire, battery holder, batteries, one mini buzzer, a plastic lamp holder, lamp, and two switches were purchased and fitted onto a piece of lexan (Figure 1) in the shape decided upon. The board was sprayed with a

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Insert Figure 1 about here

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semigloss pink paint. Three cup hooks that locked were placed along the top and a baseball collecting plastic sheet was hung from them as shown in Figure 2.

The teacher had taken several pictures of the student shaking hands. These pictures were placed on the table and she

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Insert Figure 2 about here

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picked out the one that she related to as her shaking hands. This was placed in the upper left hand corner of the sheet with an introduction phrase and instructions for her audience next to it. All interactions conducted with the subject were done primarily by the instructional assistant. The approach was one of intrusive and direct intervention which is more effective with severely disabled system user (Buzolich, King, & Baroody, 1991). The board was put on the table and the student was allowed to handle it, turn it over and make the light and the buzzer work. The instructional assistant sat slightly behind her on her dominant side while physically prompting her hand

(Mirenda & Dattilo, 1987) to activate the buzzer while having her repeat after her, "I want shake hands," as she pointed to the two symbols and the picture of herself (Locke & Mirenda, 1988). All communication partners were trained in responding to the buzzer with an immediate inquiry as to what the subject wanted. At the end of their interaction they were taught to terminate the conversation with good-bye and activation of the light switch. It was necessary to let the subject know that she could effect a change upon her communication partners through the use of the communication board (Romski & Sevcik, 1988). The buzzer allowed her to initiate conversation and get immediate attention from a variety of communication partners including peer helpers, practicum student, and school personnel (Hunt, Alwell, & Goetz, 1991). It is important in facilitating communication interaction to teach skills to the partners that will allow access to communication opportunities and the support to insure

participation of the subject (McNaughton & Light, 1989).

High school observers were taught to define and tally behaviors during thirty minute sections of fourth period. Interobserver reliability was computed using the formula agreements divided by agreements + disagreements X 100. Observer training was conducted previous to baseline and when demonstrated a reliability of 80%, baseline was initiated. Reliability measures ranged from 67% to 100% with a mean of 87%.

## Results

Concomitant behaviors were considered a possibility with the implementation of augmentative communication (Abrahamsen et al., 1989). Within twenty minutes of training the student was using three word sentences including several words that were not on the board. At that time the special

education teacher decided to start data collection on her vocabulary. The collection was done by the instructional assistant, using a wrist counter, over a full day of school. The first day of collection she used ten two word utterances. By the end of the fifth day of treatment she was up to seventeen two to five word sentences as scaled in Figure 3. The results of

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Insert Figure 3 about here

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this chart are misleading because the original 10 phrases were only two words. Within the duration of the research the phrases became as long as five words. The expansion of phrase length was not expected and therefore not separated in the data gathering. As demonstrated in research (Rowland & Schweigert, 1989), the subject began to acquire new symbols at a much faster rate, learning the last two of the eleven she

mastered during this project in just two hours. Symbols were varied using photos, objects, and line symbols that demonstrated iconicity through remembered experiences (Bowler, 1991). By the third day the subject was reaching for the board spontaneously to initiate conversations with people in the classroom. At the end of eight days of training the subjects target behaviors had surpassed the target criteria as demonstrated by Figure 4.

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Insert Figure 4 about here

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Previous to this treatment the subject had been restricted to the classroom during lunch due to her disruptive cafeteria behavior. At the end of the first week of board usage she was using it effectively in the cafeteria and around the entire school environment. The instructional assistant has noted that

she reverts back to her previous behavior when she does not have the board. The assistant who was the primary facilitator also claims that "If I had been told her behavior would have changed so dramatically, I would not have believed it. The subject blinked her eyes continuously when stressed before the implementation; she no longer does." The special education teacher states, "The greatest change has been in her affect. Before the treatment her affect was one of sadness and anger. Now it is one of happiness. There has not been a single day since implementation that she has not been happy." He attributes this change to the treatment. The Mother has noticed that she is calmer at home and using more new words than she has ever heard before. She is very pleased with her daughter's positive increase in language and appropriate behavior. The subject had a minimum of biweekly temper tantrums which involved dropping herself to the floor previous to the

intervention. Since treatment, she has had one incident and it was during an interval in which she did not have her board with her.

## Discussion

Although it would appear that the subject made a great deal of progress in both language acquisition and behavior in a relative short period of time it would be necessary to attempt to replicate this in future research for generalization. Changes in future research might consider eliminating the light which was not necessary for this subject. She responded equally as well to a verbal good-bye as to an activation of the light. The concomitant behaviors were not expected and therefore adequate baseline was not taken on them. It would behoove the researcher to expect the research to develop a life of its own and baseline all behaviors when going into a treatment that

involves an untested hypothesis.

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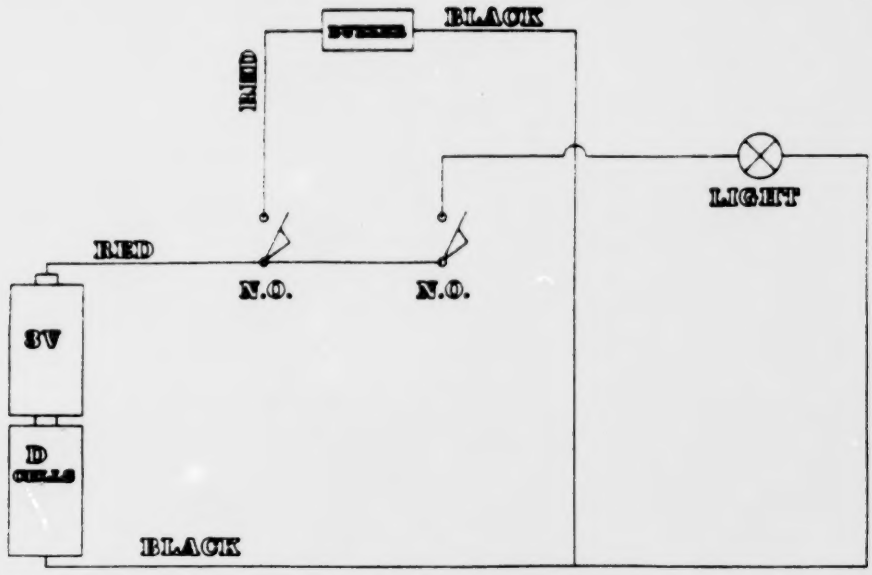



ELECTRICAL SCHEMATIC
FOR COMM. BOARD

Figure 1

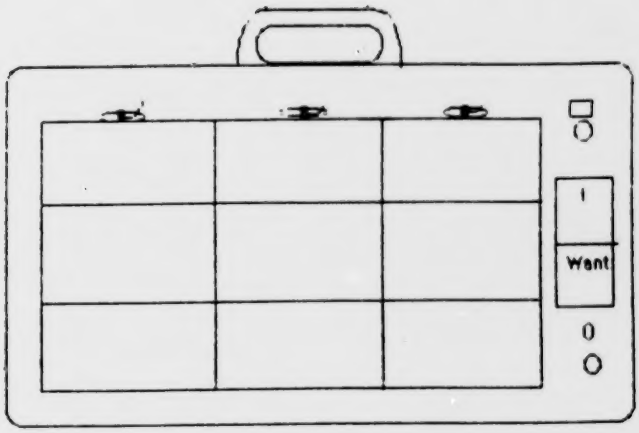



Figure 2

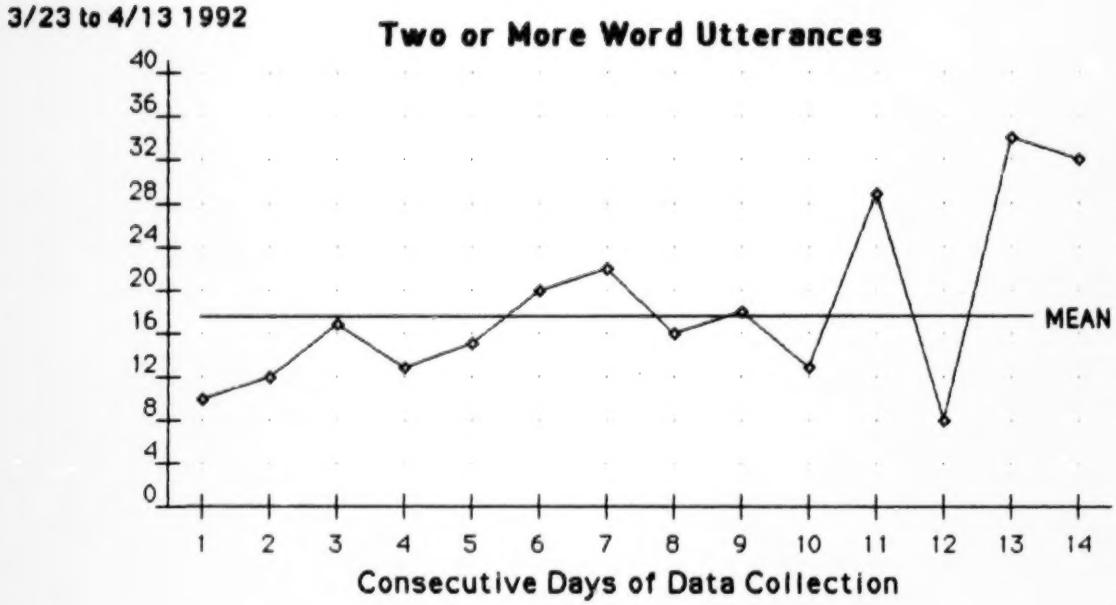

3/23 to 4/13 1992
Two or More Word Utterances
40
36
32
28
24
20
16
12
8
4
0
MEAN
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Consecutive Days of Data Collection

**Figure 3.**

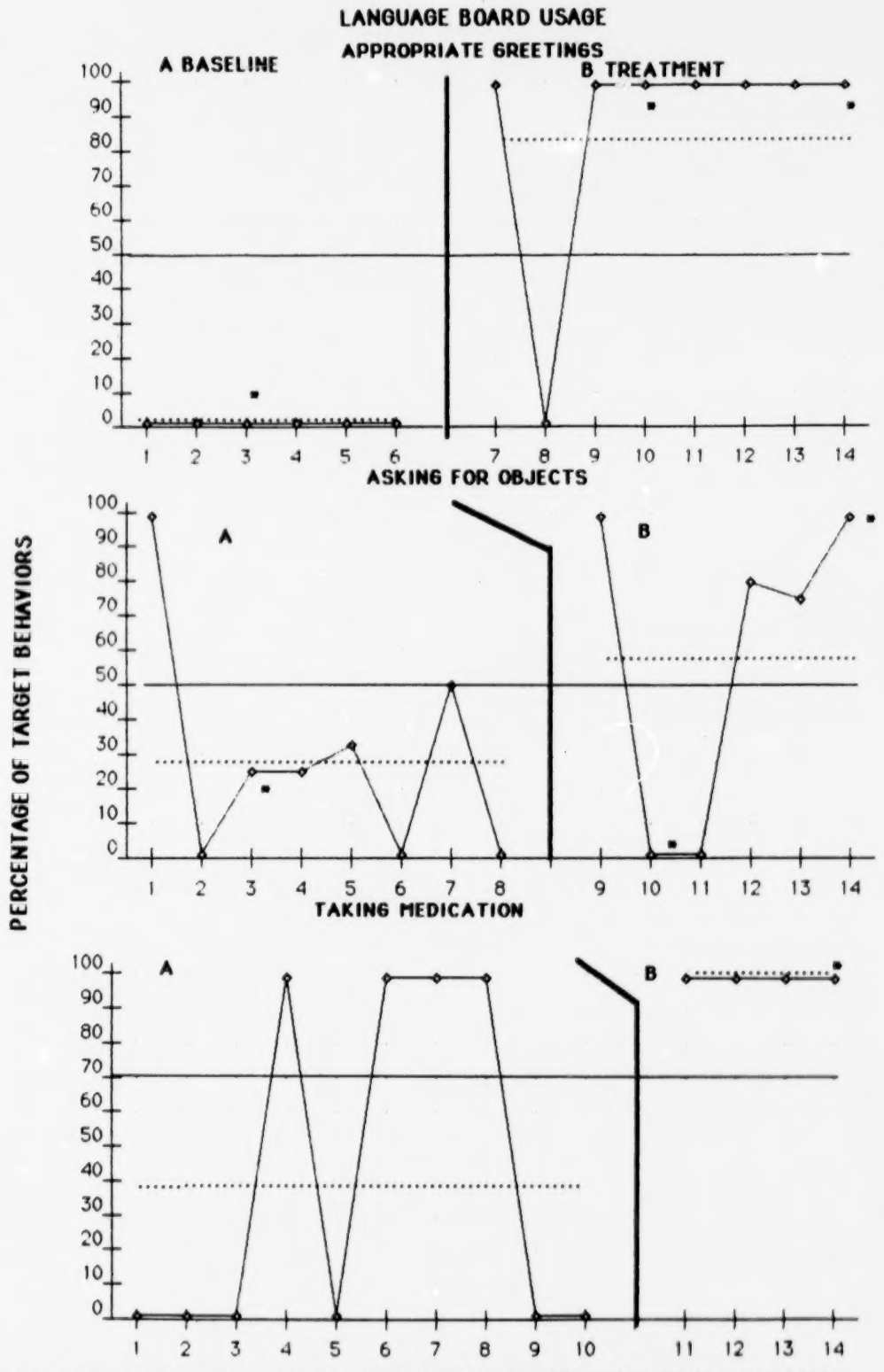
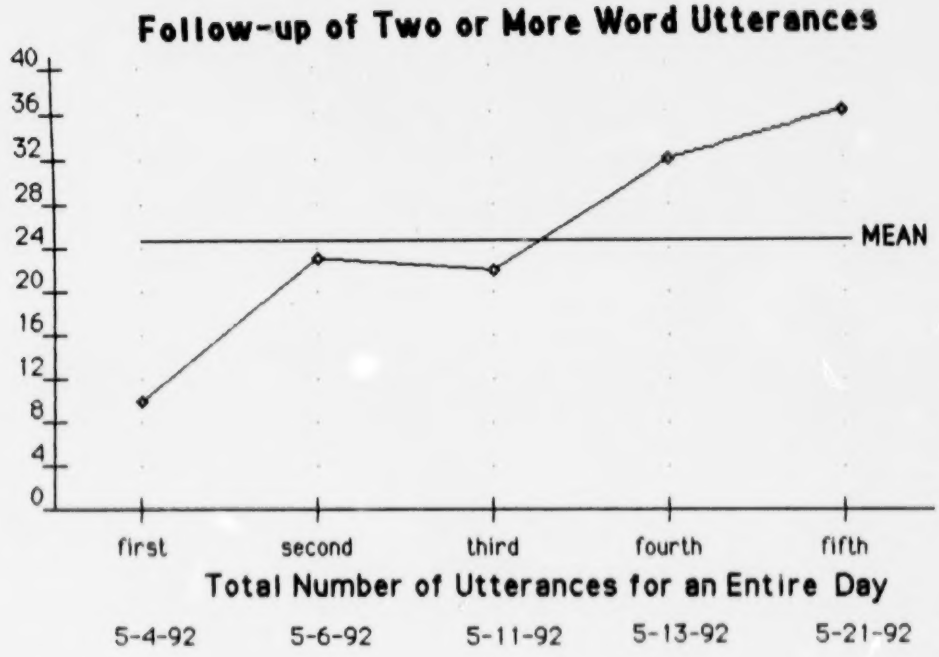

LANGUAGE BOARD USAGE
APPROPRIATE GREETINGS
A BASELINE
B TREATMENT
ASKING FOR OBJECTS
TAKING MEDICATION
PERCENTAGE OF TARGET BEHAVIORS
OBSERVATION AND DATA COLLECTION DURING CONSECUTIVE FOURTH PERIODS
— Target Criteria
... Mean
▪ Reliability Checks
A Baseline
B Treatment

Figure 4




The number of two or more word utterances noted for the entire days of follow-up from May 4, 1992 to May 21, 1992